

# *Wales*

## *Operational Experiences*



Brad Reeve

General Manager

Kotzebue Electric Association Inc.

Wind/Diesel 2004

Girdwood

# Wales Alaska

Located at the Tip of Seward Peninsula



# *Weather Issues - Wales*



# *Turbines Installed - Wales*



# *Shipping - Wales*





# *On Site Construction - Wales*



# *Turbine Erection - Wales*





# *Gin Pole - Wales*





# *Wind Turbine Control Building - Wales*



# *Wales Alaska*



# *Control Panels - Wales*





# *System Controller - Wales*





# *Secondary Heat - Wales School*



# *Project Problems - Expected/Unexpected*

- Wales diesel plant and school had to be converted from single phase to 3 phase
- Diesel generators were not pitched the same, one had to be replaced
- Modifications to the diesel plant fuel system were needed
- Modifications to diesel plant cooling system were needed
- Operator acceptance of system

# *Recent Problems - Expected/Unexpected*

- Plant boiler control circuit has had several failures and the system will not run
- Slow responding diesels will not allow system to run with diesels off mode
- A number of the PLC cards have failed causing problems with the local dump loads
- Turbine #1 currently has a tip brake problem
- Turbine #2 currently has a speed sensor problem

# *Recent Problems - Expected/Unexpected*

- Problems with diesel plant temperature control valve is causing cooling system problems, and also causing community outages
- A temperature probe on the ESS maybe causing a system fault indication, could be thermocouple or PLC card, needs trouble shooting
- Salt air corrosion has meant early replacement of junction boxes
- Community load balancing is an issue